

## BASICS OF MULTI-METHOD, MULTI-TRAIT VALIDATION

Assume that you want to "validate" that math anxiety and statistical anxiety are different traits, and you have two ways to measure each: paper and pencil measure, and a behavioral observational method. The matrix below layouts the basic and minimum "stuff" you would have to do to apply this methodology to this problem.

		Method 1 - P&P		Method 2 - Beh	
		Math Anx	Stat Anx	Math Anx	Stat Anx
Method 1 - P&P	Math Anx	Rel MA 1			
	Stat Anx	Val MM MuT	Rel SA 1		
Method 2 - Beh	Math Anx	MuM MT	Val MuM MuT	Rel MA 2	
	Stat Anx	Val MuM MuT	MuM MT	Val MM MuT	Rel SA 2

1. There is a "reliability diagonal". Values here (A's below) need to be high.
2. Methods can be MONO (same) or MULTI (different). Diff methods for same measure (B's below) should be reasonably high.
3. Traits can be MONO (same) or MULTI (different). In scenario above, traits should have fairly low correlations (C's below).
4. R's between diff traits using diff methods should be lowest

A good pattern for the above scenario might look as follows

		Method 1 - P&P		Method 2 - Beh	
		Math Anx	Stat Anx	Math Anx	Stat Anx
Method 1 - P&P	Math Anx	A (.89)			
	Stat Anx	C (.23)	A (.92)		
Method 2 - Beh	Math Anx	B (.78)	D (.08)	A (.93)	
	Stat Anx	D (.10)	B (.76)	C (.19)	A (.88)

4. Convergent and divergent validity is evidenced when the traits correlate + with things it should correlate + with, and negatively with variables it should correlate - with.
5. Full validation means all parts fitting together and data are consistent with hypotheses and expectations; partial would be some, but not all.